# ADVANCES IN MATHEMATICAL AND STATISTICAL SCIENCE

## Editors

**Dr. Med Ram Verma**

**Dr. Megha Bhamare**

**Dr. Sheetal Gomkar**

**Dr. H. S. Tomar**

**First Edition: 2022**

# CONTENT

# INTUITIONISTIC FUZZY πβ GENERALIZED CLOSED SETS

## Prema S* and Nandhitha K

Department of Mathematics,

Avinashilingam Institute for Home Science and Higher Education for Women,

Coimbatore, Tamilnadu, India

*Corresponding author E-mail: premaparameswaran14@gmail.com

**Abstract:**

This paper is devoted to the study of intuitionistic fuzzy topological spaces. In this paper πβgeneralized closed sets in intuitionistic fuzzy topological spaces is introduced. The main objective of this paper is to find the relationship between basic intuitionistic fuzzy sets and intuitionistic fuzzy πβ generalized closed and open sets. Also, we have analyzed some properties of πβ generalized closed sets in intuitionistic fuzzy topological spaces.

**Keywords:** Intuitionistic fuzzy topology, Intuitionistic fuzzy πβ generalized closed sets, intuitionistic closed sets.

## 1. Introduction:

In 1965, the concept of Fuzzy sets was introduced by Lofti A. Zadeh [10] and in 1968, Chang[2] introduced and developed fuzzy topology. After the introduction of fuzzy set and fuzzy topology, several authors conducted researchers on the generalization of these notions. In the year 1986, the notion of intuitionistic fuzzy sets was introduced by Atanassov[1] as a generalization of fuzzy sets and Coker[3] introduced the concept of intuitionistic fuzzy topological spaces in 1997. In the year 2014, Jayanthi D [5] has introduced intuitionistic fuzzy generalized β closed sets and Saranya M and Jayanthi D[7], has introduced intuitionistic fuzzy β generalized closed sets in 2016. In this paper, we have introduced the concept of intuitionistic fuzzy πβ generalized closed sets and investigated some of their properties and obtained some interesting characterizations.

## 2. Preliminaries

**Definition 2.1:** [1] Let X be a non empty fixed set. An *intuitionistic fuzzy set*(IFS in short) A in X is an object having the form A = {<x,μA(x),νA(x)>/x ϵ X}where the functionsμA(x) :X →[0,1] and νA(x):X→[0,1] denote the degree of membership (namely μA(x) ) and the degree of non – membership (namely νA(x) ) of each element x ϵ X to the set A,